

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Promotion of Competitive Networks
in Local Telecommunications Markets;
Wireless Communications Association
International, Inc. Petition for Rulemaking
to Amend Section 1.4000 of the Commission's
Rules to Preempt Restrictions on Subscriber
Premises Reception or Transmission Antennas
Designed to Provide Fixed Wireless Services

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) WT Docket No. 99-217/
) CC Docket No. 96-98
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Directed to: The Commission

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

PETITION FOR RECONSIDERATION

Triton Network Systems, Inc. ("Triton"), by its attorneys and pursuant to the provisions of section 1.429 of the rules and regulations of the Federal Communications Commission ("FCC" or "Commission"), 47 C.F.R. § 1.429 (2000), hereby requests that the agency reconsider its recent decision ("*Decision*") in the above-captioned rule making proceeding.¹ For the reasons set forth more fully below, while the Commission acted properly in the *Decision* to expand its Over the Air Reception Device ("OTARD") rule,² the FCC appears to have unintentionally excluded certain fixed wireless devices that should be appropriately covered by the new OTARD rule.

¹ See *In the Matter of Promotion of Competitive Networks in Local Telecommunications Markets, Wireless Communications Association International, Inc. Petition for Rulemaking to Amend Section 1.4000 of the Commission's Rules to Preempt Restrictions on Subscriber Premises Reception or Transmission Antennas Designed to Provide Fixed Wireless Services*, FCC 00-366, rel. Oct. 25, 2000; see also 66 Fed. Reg. 2322 (Jan. 11, 2001).

² Triton realizes that the real estate community is generally unsatisfied with the FCC's adoption and expansion of the OTARD rule. However, Triton's carrier-customers value the OTARD rule more for its constraint of local government zoning and permitting power than for its constraint of building owners' rights. The benefit of the *Decision's* expansion of the OTARD rule for the fixed wireless community will be that wireless internet access devices proliferate without delays created by local and state governments.

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I. BACKGROUND

A. Triton Network Systems, Inc.

Formed in 1997, Triton (NASDAQ: TNSI) is a leading, ISO-9001 certified, manufacturer of millimeter-wave wireless transmission systems. Triton manufactures devices, known as Invisible Fiber Units® (“IFU”), that provide communications services with the speed and reliability of fiber optic cable, but with the flexibility and low cost deployment of wireless networks. Triton’s FCC-approved IFUs transmit digital data at speeds of up to 100 megabits per second, with fiber-quality reliability.³ Triton’s Internet-Protocol (“IP”) IFUs are not unproven devices; they are in use today in both the 38.6-40.0 GHz and Local Multipoint Distribution Services (“LMDS”) frequency bands, providing 100 Mb/s internet access services in competition with slower telephony and cable technologies.⁴ Similarly, Triton’s SONET/SDH IFUs transmit data at speeds of up to 622 Mb/s.

B. Triton’s Network Architecture - Consecutive Point Networks.

Triton’s IFUs are manufactured for use in “consecutive point networks,” which are based on the proven ring architecture of SONET/SDH fiber-based networks.⁵ Consecutive point networks enable IFUs to be deployed in a ring configuration, providing self-healing redundancy. In the event of an outage, traffic is automatically rerouted via an alternate path on the ring without interruption of service. This self-healing redundancy creates a significant advantage over linear point-to-point

³ Triton’s IFUs meet fiber optic specifications of 99.999 percent availability at a Bit Error Rate (“BER”) of better than 10^{-12} .

⁴ Data transmitted at 100 Mb/s is delivered to the “desktop PC.” This data speed is achievable because most corporate Ethernet LANs already move data at 100 Mb/s. By delivering 100 Mb/s to the corporate LAN, the IFU delivers fast internet access to individual end users throughout an organization. Thus, while the original OTARD rule was based on the concept of delivery of video programming, expansion of the OTARD rule to cover IFUs is appropriate because of the video quality delivered at 100 Mb/s. End users of IFUs can download entire movies, in their full digital-picture quality.

⁵ In December 2000, the nation’s largest licensee of LMDS spectrum, XO Communications, announced that it would deploy consecutive point networks. *XO To Use Consecutive Point Architecture*, Toby Weber, *Telephony*, Dec. 11, 2000.

and point-to-multipoint networks that can be disabled by a single point of failure. Unlike traditional point-to-point networks, which consist of a single link between two locations, and point-to-multipoint networks, based on a hub and spoke architecture, consecutive point networks are constructed using a "point-to-point-to-point" ring architecture. Consecutive point networks address not only the "last mile" but also the "last square mile," or connectivity for the whole metropolitan service area.

Consecutive point networks allow FCC licensees to offer their subscribers broadband access more quickly and at a lower cost than they would using fiber networks. The consecutive point network architecture offers greater network scalability and flexibility, enabling FCC licensees to rapidly and easily expand or reconfigure their networks without interrupting service by simply adding or reconfiguring IFUs within their network. Consecutive point networks are also highly scalable - providing the flexibility to maximize spectrum utilization. Several consecutive point network rings can be connected to the same point-of-presence, thus increasing service area and revenue potential. FCC licensees may also deploy multiple rings in an area, making network capacity virtually unlimited. If a ring reaches maximum capacity, a customer can simply deploy additional links and split the ring in two, doubling the bandwidth of the ring.

C. The Revised OTARD Rule.

The *Decision* amends section 1.4000 of the FCC's regulations to include antenna devices, smaller than one meter in diameter, that are "used for transmitting or receiving fixed wireless signals." *Decision* at ¶ 97. The *Decision* states, however:

We make clear, however, that the protection of Section 1.4000 applies only to antennas at the customer end of a wireless transmission, i.e., to antennas placed at a customer location for the purpose of providing fixed wireless service (including satellite service) to one or more customers at that location. We do not intend these rules to cover hub or relay antennas used to transmit signals to and/or receive signals from multiple customer locations.

Decision at ¶ 99 (emphasis added) (the "Restriction").

Triton submits this petition, and urges that the Commission reconsider its Decision with respect to the Restriction, or otherwise clarify that the Restriction was not intended to exclude Triton's IFUs, or similar fixed wireless devices that are deployed in consecutive point networks.

II. DISCUSSION

A. IFUs are Physically Similar to Existing OTARDS.

Triton's IFUs are small enough (16" H x 16" W x 14.5" D, or 40 cm H x 40 cm W x 36 cm D)⁶ to otherwise be covered by the revised OTARD rule. Triton's IFUs also bear all of the same relevant physical characteristics of other fixed wireless devices that are clearly OTARDS. For example, each IFU is neutral-colored (and fully paintable), and is completely housed in a weatherproof outdoor unit that requires no maintenance or similar adjustments after installation. Similar to Direct Broadcast Satellite ("DBS") dishes, for example, the IFU may be wall or pole mounted, and is barely visible on most buildings. Triton's IFUs also transmit with adaptive power, and are fully compliant with the FCC's regulations governing human exposure to harmful radiofrequency ("RF") radiation.

B. Specification of IFUs as OTARDS is Proper.

The Restriction is problematic, however, only because of the manner in which Triton's IFUs are deployed -- the configuration of a consecutive point network appears to be the only factor that may exclude Triton's device from the newly-revised OTARD rule. In a typical installation, each IFU is both a relay device and a customer device, operating in much the same way as an Ethernet LAN port functions in a networked office environment. For example, if an IFU is located on the rooftop of a building, that IFU is connected by CAT-5 Ethernet cabling to one or more tenants in the building that use that IFU to transmit and receive IP data by radio transmissions that connect the IFU to the nation's internet backbone, via a long-haul fiber connection in the metropolitan area.

⁶ Triton is actively developing IFUs with even smaller physical dimensions.

However, the same IFU⁷ also transmits IP data to other buildings in the ring - in the manner of a relay device. Thus, the Restriction appears to cover the type of consecutive point networks in which the IFUs are employed.

A consecutive point network, while different in the manner by which it moves IP data throughout an urban area, has no different impact on visual aesthetics or local zoning interests than does a point-to-multipoint distribution system. In either system, each customer (or group of customers) has a device on its building. The fact that, in a consecutive point network, those same customer devices are also relaying data to other customers has no bearing on whether they should be classified as OTARDS or not. The apparent purpose underlying the Restriction, although unstated in the *Decision*, appears to be the exclusion of multiple collocated antenna devices (e.g., six antenna devices on the same small mast) as OTARDS. While Triton does not challenge that rationale, the Restriction is overinclusive because it covers situations where the visual impact of the device is not different from devices such as DBS dishes.

C. The Commission Should Not Discriminate By Technology Choice.

The Commission should endeavor to make its OTARD rule “technology neutral,” and not unfairly exclude devices that are deployed in consecutive point networks, or similar ring or mesh architecture. Otherwise, the Commission will create two classes of fixed wireless providers -- one that may freely deploy devices to meet consumer demand, and one that will often be required to secure zoning approvals to serve customers. If the Commission’s rules are interpreted in this

⁷ IFUs are transmit and receive devices, using the same antenna device. In each installation, however, there must be two IFUs for each customer location (two combined are still smaller than one meter); otherwise the ring has no self-healing capability. However, even in situations where there are two IFUs on a particular building, those two IFUs are generally on separate sides of the building (for line-of-sight purposes) and not visible together. This is no worse, of course, than multiple DBS dishes on the same apartment building. Triton also realizes that its FCC licensee-customers’ points of presence, where there could be as many as twelve IFUs on a building, would not be covered by the OTARD rule.

manner, the former class of provider will have an advantage based only on regulatory structure, and not technology or consumer demand.

The Commission has consistently emphasized the need for its regulations to be technology neutral. See *Federal-State Joint Board on Universal Service; Western Wireless Corporation Petition for Designation as an Eligible Telecommunications Carrier In the State of Wyoming*, DA 00-2896, ¶ 11 (Dec. 26, 2000) (“The Commission concluded that the principle of competitive neutrality includes technological neutrality.”). This goal is especially important with respect to regulations that govern advanced wireless networks. See *3-G Interim Report*, rel. Nov. 15, 2000 (noting that the President directed that “the federal government must be technology-neutral in spectrum allocation and licensing decisions”); see also *Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, FCC 00-326, ¶ 40 (Sept. 8, 2000) (“[A] rule that is ostensibly neutral on its face may in fact favor one technology and preclude another.”). In fact Congress requires technology neutral regulations that relate to advanced broadband networks. See Section 706 of the Telecommunications Act of 1996 (defining “advanced telecommunications capability” “without regard to any transmission media or technology”).⁸

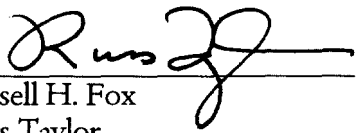
⁸ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 153.

III. CONCLUSION

WHEREFORE, THE FOREGOING PREMISES CONSIDERED, Triton Network Systems, Inc. respectfully requests that the FCC clarify or reconsider the Restriction.

Respectfully submitted,

TRITON NETWORK SYSTEMS, INC.

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